



public works  
& infrastructure  
Department:  
Public Works and Infrastructure  
REPUBLIC OF SOUTH AFRICA

## **SUNDUMBILI MAGISTRATE OFFICE: ADDITIONAL ACCOMMODATION**

## **STRUCTURAL/CIVIL ENGINEERING SPECIFICATIONS**

<p><b>NOTES :</b></p>	<p><b>APPLICABLE STANDARD AND SPECIFICATIONS</b></p>
<p>1. LEVELS TO BE CHECKED AND CONFIRMED BY CONTRACTOR PRIOR TO ANY EXCAVATIONS. FILLS TO BE MINIMUM G5 QUALITY AND COMPACTED IN 150mm LAYERS TO 95% MOD AASHTO. ALL DRAWINGS MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER BEFORE WORK COMMENCES.</p> <p>2. ALL MATERIALS &amp; WORKMANSHIP TO BE IN ACCORDANCE WITH THE RELEVANT SABS SPECIFICATION.</p> <p>3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS, ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY ACT, LATEST REVISION.</p> <p>4. THE MAIN CONTRACTOR IS TO ENSURE THAT A COMPETENT PERSON, APPOINTED BY THE SOUTH AFRICAN QUALIFICATION AUTHORITY SUPERVISES AND APPROVES ALL ASPECTS OF THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, LATEST REVISION.</p> <p>5. ALL TEMPORARY WORKS TO BE DESIGNED, DETAILED, SUPERVISED AND CERTIFIED BY A COMPETANT PERSON OR PROFESSIONAL ENGINEER AS DEFINED IN THE OHS ACT.</p> <p>6. THE WORKS WILL BE INSPECTED FROM TIME TO TIME BY THE CONSULTING ENGINEER TO ASCERTAIN THAT THE CONTRACTOR IS CARRYING OUT THE WORK IN GENERAL CONFORMITY WITH THE ENGINEERING DRAWINGS &amp; DOCUMENTS. SUCH INSPECTIONS ARE NOT CARRIED OUT FOR THE BENEFIT OF THE CONTRACTOR, AND DO NOT RELIEVE HIM OF THE RESPONSIBILITY FOR THE PROPER CONSTRUCTION OF THE WORKS IN ACCORDANCE WITH THE ENGINEERING DRAWINGS, DOCUMENTS &amp; GOOD BUILDING PRACTICE.</p>	<p>Although not issued with this drawing, the following Standardised specifications shall form part of the Drawings and, not withstanding the provisions Of sub-clause 2.2 of sabs 1200a, the editions specified Below shall apply, unless otherwise specified</p> <p>SABS 1200 C - 1982 : SITE CLEARANCE  SABS 1200 D - 1990 : EARTHWORKS  SABS 1200 DB - 1982 : EARTHWORKS (PIPE TRENCHES)  SABS 1200 DM - 1981 : EARTHWORKS (ROADS, SUBGRADE)  SABS 1200 GA - 1982 : CONCRETE (SMALL WORKS)  SABS 1200 GE - 1984 : PRECAST CONCRETE (STRUCTURAL)  SABS 1200 LB - 1983 : BEDDING (PIPE)  SABS 1200 LD - 1982 : SEWERS  SABS 1200 LE - 1982 : STORMWATER DRAINAGE  SABS 1200 M - 1996 : ROADS (GENERAL)  SABS 1200 L - 1983 : MEDIUM PRESSURE PIPELINES  SABS 1200 ME - 1981 : SUB - BASE  SABS 1200 MF - 1981 : BASE  SABS 1200 MG - 1996 : BITUMINOUS SURFACE TREATMENT  SABS 1200 MH - 1996 : ASPHALT BASE AND SURFACING  SABS 1200 MJ - 1984 : SEGMENTED PAVING  SABS 1200 MK - 1983 : KERBING AND CHANNELLING  SABS 1200 MM - 1984 : ANCILLARY ROADWORKS  TRH 14 - 1985 : GUIDELINES FOR ROAD CONSTRUCTION MATERIALS</p>



# **SURFACE BLASTING SERVICES CC**



Vat No. 4940110325 Reg. No.: CK 86/05239/23

**EST. 1979**

6 BALLANCE ROAD, DURBAN 4001 • TELEPHONE: (031) 303 2410 • FAX: (031) 312 5090

E-mail: [veronica@sbscc.co.za](mailto:veronica@sbscc.co.za)

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**DATE: 12 NOVEMBER 2019**

## **Method Statement: SUNDUMBILI MAGISTRATE COURT**

Surface Blasting Services was founded in February 1979 by Ernie Du Plessis who has had his Surface Blasting Certificate since 1969  
Messrs Surface Blasting Services is very proud of its safety record.

When using explosives there are three main criteria:-

➤ **Ground Vibration**

To curtail ground vibration we use formula 1 (enclosed), maximum permissible charge/delay when blasting adjacent to private property.

Our maximum peak particle velocity will not exceed 25mm/s. Table 2.

➤ **Fly Rock**

In this contract, we will use sand to cover the blast to prevent fly rock.

➤ **Air Blast**

The detonating fuse on the surface of the blast detonates at 22000 feet per second thus causing air blast. The way to curtail the air blast is to cover the surface detonating fuse with sand.

Surface Blasting Services will move onto site with our drilling equipment. FULL PPE will be worn during drilling operations which includes gloves & earplugs.

### **HAND DRILL**

The method that will be used on the SUNDUMBILI MAGISTRATE COURT contract is to handdrill a 34mm hole for the bulk leveling, we will drill a square pattern at 0.8 meter therefore our spacing and burden would be 0.8 x 0.8 meter. The holes will be charged with 25 x 200 buster cartridges. The holes would be lined with detonating fuse. A stemming of 0.7m will be used. On the surface the holes will be connected with detonating fuse and 25mm sec relay will be placed as not to exceed 25mm sec peak particle velocity at the existing structures.

The holes will be marked by a qualified blaster who will also supervise the drilling. The contractor will give us levels and all holes will be drilled to the required level, please be aware that our minimum drill depth is 0.9m and will be invoiced accordingly. After the drilling has been completed we will obtain blasting and transport permits from the SAPS. We inform the Inspector of Explosives the amount of explosives to be used and the distance from the explosive magazine Ridgeview (place where explosives are stored) to the Sundubili Magistrate court.



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There is a large volume of rock billed on the contract +/- 7500m<sup>3</sup>. Each mobile drilling team consisting of 400cfm compressor and 5 labourers can drill between 60 & 100m<sup>3</sup> per day. We would suggest putting 3 teams on site and anticipate the drilling and blasting taking about 45 day to complete. Blasting should take place twice a week and the contractoctor must make sure that we have enough cover material to put at least 1.2m of soft material over each blast so curtail any fly rock.

The vehicles used to transport explosives have to comply with specifications set down in the Explosives Act. The vehicles are equipped with 9kg DCP fire extinguishers which are inspected monthly.

Prior to blasting our Safety officer and the CONTRACTOR representative will go around doing inspections in all the properties that are near the blast area i.e. houses and schools. The inspection records will be kept in the safety file. The residents will sign the public notification form to confirm that they have been informed about the blasting.

The road will be closed when blasting near the road. The traffic will be stopped or the alternative road will be used if available.

On the day of the blast, the blaster with his permits, will draw explosives and proceed to the blast site. The explosives are carried in special locked up aluminium boxes. On site the blasting boards will be placed around the blast area. The blaster will then charge up the drilled holes and will be covered with sand.

Once the blast has been charged up the blaster will then be send his staff with red flags to remove all persons and animals to a safe distance of at least 50m away . The blaster will then personally visit the flagmen to ensure the area is safe .The flagmen will be standing in all the corners of the blast area making sure that the blast area is clear until the blast is done. He will then attach the detonator to the detonating fuse. The Blaster will drive with his siren for at least 2 minutes to inform the public around site.

The blast is set off by an electric shot exploder attached to a blast cable, a safe distance from the blast. The blaster will only fire the shot once he is satisfied once the area is safe and he has contact with all his flagmen. Once the shot has been fired the blaster will then visit the blasted area to check that all the shots have gone off. Once he is satisfied he will then declare the area safe.



# **SURFACE BLASTING SERVICES cc**



Val No. 4940110325 Reg. No.: CK 06/05239/23

**EST. 1979**

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If there has been a misfire the flagmen will keep the site clear as the blaster connects to another detonator and again follow the same procedure.

No storage of explosives is permitted on the site. All requirements of the Explosives Act are followed.

All Staff are provided with protective clothing i.e. goggles, earplugs, mask etc.

The Inspector of Explosives is advised before 9 hours of the expected time of the blast. He will visit our sites regularly to make sure that all safety precautions and regulations are adhered to.

Enclosed is a copy of Table 1 & 2 according to which our blast is designed.

Should you require any further information, please do not hesitate to contact me on 0837799030 or at my office on 0313032410

Yours Faithfully

HAYDN DU PLESSIS  
C.E.O

H.G Du Plessis (C.E.O), T.E Du Plessis (Member)



## **STANDARD TESTING REQUIREMENTS:**

### **Concrete Cube Testing**

- For minor concrete pours min. 6 No. cube tests per concrete pour to be carried out. 3 cubes to be tested at 7 days, and the results to be forwarded to the Engineer as soon as they have been received by the Contractor. The remaining 3 cubes are to be tested at 28 days, and the results to be forwarded to the Engineer no later than 30 days from the cast date.
- Where concrete pours exceed 30m<sup>3</sup>, 12 No. cube tests to be carried out, per every 30m<sup>3</sup> 4 cubes to be tested at 7 days, and the results to be forwarded to the Engineer as soon as they have been received by the Contractor. The remaining 8 cubes are to be tested at 28 days, and the results to be forwarded to the Engineer no later than 30 days from the cast date.
- Preferred method of curing is water curing (flooding of sample for 7 days).
- Contractor to ensure that batch numbers, cast dates and concrete elements are summarised on an excel spreadsheet, so that tests can be cross-referenced to the relevant structural element
- Cube testing must be carried out by an independent lab and results must be forwarded to the Engineer for approval.
- Results of cubes tested at more than 30 days of age will not be accepted by the Engineer.
- Structural Engineer and Architect to inspect and approve of formwork prior to concrete being poured.

**NOTE :** If/Where concrete test cubes have failed, the Contractor may be instructed to conduct concrete compressive core tests as and where required.  
(This cost may be to the Contractor's account)

### **Compaction Testing**

- Compaction results for density testing must be forwarded to the Engineer for approval prior to any concrete being poured.
- Testing for deep fills (>500mm) to be done at minimum 300mm intervals, unless otherwise stated by the Engineer.
- Min. 1 No. compaction test to be done for each 25m<sup>2</sup> area, unless otherwise stated by the Engineer.
- Engineer to be notified to conduct inspections on fill material prior to, or at the time of testing.